

stands. Because such stands are rare on the landscape, we were unable to adequately examine how frequently they are used by spotted owls. Flying squirrel density was greater in old-growth than in second-growth stands, but density varied greatly among stands. This problem needs further research.

BURROWING OWL SYMPOSIUM

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ECOLOGY OF THE BURROWING OWL IN PAMPEAN AGROSYSTEMS OF ARGENTINA

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A general approach to the ecology of Burrowing Owls in Pampean agrosystems of Argentina was made: 1) to record basic information on habitat use, food habits, hunting habitat, differential predation on rodents, feeding strategy, mortality factors, and breeding biology; 2) to examine the reproductive success and needs of conservation; and 3) to examine regulatory effects on rodent populations. The Burrowing Owl is the most abundant owl in Pampean agrosystems. It is a generalist predator and its diet strongly depends on the availability of alternative prey. Borders of cultivated fields are the most common hunting habitats, where they showed differential predation on rodent species. The Burrowing Owl showed a sigmoidal functional response to the abundance of rodent populations; and this might contribute to the biological control of rodents in Pampean agrosystems. Nests are built in areas with relatively low disturbance. Mean clutch size was 4.8 ± 1.2 eggs, mean hatching per nest was 3.5 ± 2.4 , and reproductive success was as low as 0.3 fledges per brood. Brood size affected growth of chicks. Main mortality factors of eggs were agricultural practices and predation, while illnesses and human predation were the main mortality factors of chicks. The low reproductive success may negatively influence the near future of Burrowing Owl populations in Pampean agrosystems. More studies should be done to provide more information (especially on mortality factors and population dynamics) before considering possible strategies for management and conservation.

THE BURROWING OWL IN THE AMERICAS: ITS TAXONOMY AND HISTORICAL DISTRIBUTION

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The Burrowing Owl was originally placed in the Genus *Strix* (1782) and then placed in the Genus *Athene* (1822) followed by being separated into a monotypic Genus *Speotyto*

in 1842. It was later again included within *Athene* (1967–88) and again suggested as being properly placed in the monotypic Genus *Speotyto* in 1990. Evidences for these recommendations are reviewed. There are 18 commonly recognized geographic races of *Athene cunicularia* with two races having become extinct in historical times. The geographic distribution of these races is also reviewed. The above discussions are based on the literature, and an extensive bibliography is presented.

RESULTS OF THE 1991 CENSUS OF BURROWING OWLS IN CENTRAL CALIFORNIA: AN ALARMINGLY SMALL AND DECLINING POPULATION

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The Institute for Bird Populations, with the help of volunteers from 13 local Audubon Society chapters and ornithological organizations, conducted a census of Burrowing Owls in the San Francisco Bay Area and the central part of California's Central Valley during the period May 15–June 30, 1991. A random stratified sample of 198 of the 1792 5-km by 5-km UTM blocks in this 43 425-km² census area, along with 82 additional blocks that were not randomly chosen but were thought to contain breeding owls sometime during the preceding decade, were censused. A total of 328 pairs of owls was found at a total of 264 breeding locations in 73 blocks. These data suggest that the total breeding population of Burrowing Owls in the census area may be as low as 925 pairs, and that up to 69.4% of the 504 previously suspected breeding pairs and 65.6% of the 355 previously suspected breeding locations may have disappeared during the past decade. The data also suggest that the disappearance rate was greater in the Bay Area than in the Central Valley, and that the disappearance rate in both regions, but especially in the Central Valley, is accelerating. Loss of breeding habitat appears to be one major cause for this pronounced population decline. The fact that the number of breeding pairs per breeding location also appears to be declining, particularly in the Central Valley, suggests that other factors may also be contributing to the decline. We suggest that unless concerted efforts to reverse this population decline are initiated quickly, Burrowing Owls may be extirpated from central California within about 50 years. Possible errors in these results, and methods for determining the extent of these errors in the 1992 and 1993 censuses, are discussed.

SITE FIDELITY IN BURROWING OWLS

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An effort to dislocate a pair of Burrowing Owls in San Joaquin County, California from a development site during the early winter of 1991–92 and subsequent monitor-